

Giulia Pedrini

Medical communication between Plain Language and Einfache Sprache

A corpus analysis of layperson summaries of clinical trials
in English, German, and Italian

F Frank & Timme
Verlag für wissenschaftliche Literatur

Table of contents

Acknowledgments	17
1 Introduction	19
1.1 Language in the medical field: challenges and outlook	19
1.2 Accessible communication and language simplification	22
1.2.1 Language simplification as intralingual translation ...	25
1.2.2 Language simplification in English, German, and Italian	27
1.2.3 Language simplification and accessibility in health care	31
1.2.4 Interlingual translation of simplified language variants	32
1.3 Clinical Trials Regulation (No. 536/2014) and layperson summaries	33
1.3.1 Clinical studies and trials	33
1.3.2 Regulation No. 536/2014 and the layperson summaries of clinical trial results	35
1.4 Layperson summaries' guidelines	40
1.4.1 Recommendations of the Expert Group on Clinical Trials	41
1.4.2 Good Lay Summary Practice	45
2 Research questions, corpus description, and methodology	53
2.1 Research questions	53
2.2 Corpus description	54
2.2.1 Pharmaceutical companies	55

2.2.2	Diachronic and diatopic variables	57
2.2.3	Corpus construction and lexicometric data	60
2.3	Structure and methodology	62
3	Terminology and vocabulary	65
3.1	Theoretical framework	65
3.1.1	The role of vocabulary and terminology in LSPs	66
3.1.2	Features of terminology	67
3.1.3	Medical terminology	70
3.1.4	Terminology and comprehensibility	72
3.1.5	Vocabulary and terminology in guidelines for language simplification	75
3.1.6	Word frequency and dictionaries	79
3.2	Methodology	81
3.3	Analysis	84
3.3.1	Word frequency	84
3.3.2	Morphemes of classical matrix	135
3.3.3	Analysis of verbs signaling explanations, definitions, and other glosses	168
3.3.3.1	Explanations, definitions, and other glosses in the STs	168
3.3.3.2	Translations of the explanations, definitions, and glosses	178
3.4	Discussion	186
4	Active and passive voice	197
4.1	Theoretical framework	197
4.1.1	A brief overview of passives in English, German, and Italian	198
4.1.2	Cross-linguistic and translational perspective	202

4.1.3 Frequency of passive voice in LSPs and functions	205
4.1.4 Cognitive implications of voice	207
4.1.5 Voice and guidelines for language simplification	210
4.2 Methodology	211
4.3 Analysis	212
4.3.1 Automated analysis	212
4.3.2 Further types of passives and alternatives to passives	217
4.4 Discussion	229
5 Nominalization	231
5.1 Theoretical framework	231
5.1.1 The nominalization phenomenon	231
5.1.2 Nominalization and deverbalization in LSPs	232
5.1.3 Cognitive implications of nominalization	237
5.1.4 Cross-linguistic and translational perspective	239
5.1.5 Nominalization in guidelines for language simplification	244
5.2 Methodology	245
5.3 Analysis	247
5.3.1 Nominalizing suffixes	247
5.3.2 Case studies	280
5.3.3 Observation of nominalization/verbalization in the selection of texts	290
5.4 Discussion	297
6 Syntactic tendencies: parataxis or hypotaxis	299
6.1 Theoretical framework	299
6.1.1 The coordination/subordination dichotomy	299
6.1.2 Syntax in LSPs	300

6.1.3	Cross-linguistic and translational perspective	301
6.1.4	Cognitive implications of parataxis and hypotaxis	302
6.1.5	The coordination/subordination dichotomy in language simplification	304
6.2	Methodology	308
6.3	Analysis	310
6.3.1	Qualitative analysis	310
6.3.2	Quantitative analysis	316
6.3.2.1	Frequency of subordinators	316
6.3.2.2	Frequency of coordinators	322
6.3.2.3	Case study	324
6.4	Discussion	332
7	Textuality	341
7.1	Theoretical framework	341
7.1.1	Textuality: a brief excursus on coherence and cohesion	341
7.1.2	Cohesive devices	342
7.1.2.1	Connectives	345
7.1.3	Cognitive implications of textual features	346
7.1.4	Cross-linguistic and translational perspective	347
7.1.5	Textuality in guidelines for language simplification ...	349
7.2	Methodology	354
7.3	Analysis	358
7.3.1	Content, text hierarchy, and references	358
7.3.2	Metacommunicative comments and allocutive forms	361
7.3.3	Text cohesion	365
7.4	Discussion	370

8 Layout and multicodality	375
8.1 Theoretical framework	375
8.1.1 Cognitive implications	375
8.1.2 Guidelines for language simplification	377
8.2 Methodology	386
8.3 Analysis	387
8.4 Discussion	399
9 Gender-inclusive language	401
9.1 Theoretical framework	401
9.1.1 The concept of gender-inclusive language	401
9.1.2 Gender-inclusive English, German, and Italian	404
9.1.3 Gender-inclusive language in LSPs	407
9.1.4 Gender-inclusive language and comprehensibility	408
9.1.5 Gender-inclusive language and language simplification	408
9.2 Methodology	411
9.3 Analysis	412
9.4 Discussion	421
10 Explicitness	423
10.1 Theoretical framework	423
10.1.1 Explication in linguistics and translation	423
10.1.2 Explicitness, comprehensibility, and language simplification	425
10.2 Methodology	425
10.3 Analysis	426
10.3.1 Explication and additions in the translation of terms	426
10.3.2 Explicit and implicit subordinate clauses	436
10.4 Discussion	440

11 Readability indices and other data	441
11.1 Theoretical framework	441
11.1.1 Readability indices	441
11.1.2 Additional data	445
11.1.3 Readability indices in layperson summaries' guidelines	446
11.2 Methodology	446
11.3 Analysis	449
11.3.1 Values indicating the highest levels of complexity	455
11.3.2 Values indicating the lowest levels of complexity	456
11.3.3 Overall values and (un)suitability for a general audience	458
11.3.4 Lexicometric data of the whole corpus	459
11.4 Discussion	460
12 Conclusions	463
12.1 Collocation in the continuum of language simplification	463
12.2 Main features of the layperson summaries in the STs and TTs	466
12.3 Compliance with guidelines' indications	470
12.4 Suggestions for layperson summaries' guidelines and practice	473
12.5 Further research desiderata	480
References	483
Appendix	517

List of figures

Fig. 1:	Continuum of language simplification according to Hansen-Schirra and Maaß (2020: 18)	22
Fig. 2:	Categorization of clinical studies	34
Fig. 3:	Portal of the pharmaceutical company Roche	56
Fig. 4:	Portal of the pharmaceutical company Novartis	56
Fig. 5:	Nouns in the English subcorpus	127
Fig. 6:	Nouns in the German subcorpus	127
Fig. 7:	Nouns in the Italian subcorpus	127
Fig. 8:	Adjectives in the English subcorpus	128
Fig. 9:	Adjectives in the German subcorpus	129
Fig. 10:	Adjectives in the Italian subcorpus	129
Fig. 11:	Verbs in the English subcorpus	130
Fig. 12:	Verbs in the German subcorpus	130
Fig. 13:	Verbs in the Italian subcorpus	131
Fig. 14:	Adverbs in the English subcorpus	131
Fig. 15:	Adverbs in the German subcorpus	132
Fig. 16:	Adverbs in the Italian subcorpus	132
Fig. 17:	The total of all four PoS categories in the English subcorpus	133
Fig. 18:	The total of all four PoS categories in the German subcorpus	133
Fig. 19:	The total of all four PoS categories in the Italian subcorpus	134
Fig. 20:	Average percentage of active and passive sentences in the whole corpus	213
Fig. 21:	Average percentage of active and passive sentences in the three subcorpora of the pharmaceutical company Bayer	214
Fig. 22:	Average percentage of active and passive sentences in the three subcorpora of all pharmaceutical companies except Bayer	214
Fig. 23:	Average percentage of active and passive sentences in the three subcorpora of the pharmaceutical company GSK	215
Fig. 24:	Average percentage of active and passive sentences in the three subcorpora of the pharmaceutical company Novartis	216
Fig. 25:	Average percentage of active and passive sentences in the three subcorpora of the pharmaceutical company Roche	217
Fig. 26:	Instance of relative clause in an illustration (Roche)	313
Fig. 27:	Instance of <i>Linksattribut</i> in an illustration (Roche)	313
Fig. 28:	Example of contents lists	359
Fig. 29:	Reference to trial summaries for experts in a text by Bayer	360
Fig. 30:	Reference to trial summaries for experts (including instructions) in a text by Roche	361

Fig. 31: Example of a content list over more pages	387
Fig. 32: List within lists (1)	388
Fig. 33: List within lists (2)	388
Fig. 34: Lists with icons	389
Fig. 35: Bold weight in the running text	390
Fig. 36: Bold weight for temporal indications	391
Fig. 37: Bold weight to highlight term paraphrases/popular terms in lists	392
Fig. 38: Bold weight to highlight term paraphrases/popular terms in charts/tables (1)	392
Fig. 39: Bold weight to highlight term paraphrases/popular terms in charts/tables (2)	392
Fig. 40: Picture signaling the text type in layperson summaries by Bayer	393
Fig. 41: Picture signaling the text type in layperson summaries by Novartis	394
Fig. 42: Illustration of a healthy and damaged liver as a visual aid	394
Fig. 43: Instance of icon use	395
Fig. 44: Instances of generic icons	396
Fig. 45: Instances of specific icons (1)	396
Fig. 46: Instances of specific icons (2)	397
Fig. 47: Instances of specific icons (3)	397
Fig. 48: Example of bar chart	398
Fig. 49: Instance of text structure tending towards Easy Language	464
Fig. 50: Instance of <i>Leichte Sprache</i> text (NDR 2024)	464

List of tables

Table 1: Pharmaceutical company texts in the subcorpora	57
Table 2: Corpus period of reference	58
Table 3: Lexicometric data	60
Table 4: English nouns	88
Table 5: English adjectives	91
Table 6: English verbs	95
Table 7: English adverbs	98
Table 8: German nouns	102
Table 9: German adjectives	105
Table 10: German verbs	109
Table 11: German adverbs	112
Table 12: Italian nouns	116
Table 13: Italian adjectives	119
Table 14: Italian verbs	123
Table 15: Italian adverbs	126
Table 16: List of prefixes	142
Table 17: List of suffixes	147
Table 18: List of roots	154
Table 19: English nouns with nominalizing suffixes	252
Table 20: German nouns with nominalizing suffixes	271
Table 21: Italian nouns with nominalizing suffixes	279
Table 22: <i>d-Ausdrücke</i> by Bredel and Maaß (2016a: 401)	306
Table 23: Subordinators in the English subcorpus	317
Table 24: Subordinators in the German subcorpus	319
Table 25: Subordinators in the Italian subcorpus	320
Table 26: Comparison of subordinators	321
Table 27: Coordinators in the English subcorpus	322
Table 28: Coordinators in the German subcorpus	323
Table 29: Coordinators in the Italian subcorpus	323
Table 30: Occurrences of <i>when</i> and translations	331
Table 31: English connectives	356
Table 32: German connectives – conjunctive adverbs	357
Table 33: Italian connectives	358
Table 34: English connectives in the corpus	366
Table 35: German connectives – conjunctive adverbs in the corpus	367
Table 36: German connectives – prepositional/pronominal adverbs in the corpus	367

Table 37: Italian connectives in the corpus	368
Table 38: Subordinators with implicit use occurrences in the English subcorpus	437
Table 39: Subordinators with implicit use occurrences in the German subcorpus	437
Table 40: Subordinators with implicit use occurrences in the Italian subcorpus	438
Table 41: Evaluation of LIX scores	443
Table 42: Evaluation of Flesch-Index scores	443
Table 43: English readability indices' scores	451
Table 44: German readability indices' scores	453
Table 45: Italian readability indices' scores	454
Table 46: TTR and lexical density of the whole corpus (Sketch Engine)	459
Table 47: Prefixes of Greek/Latin matrix	518
Table 48: Suffixes of Greek/Latin matrix	519
Table 49: Roots of Greek/Latin matrix	524